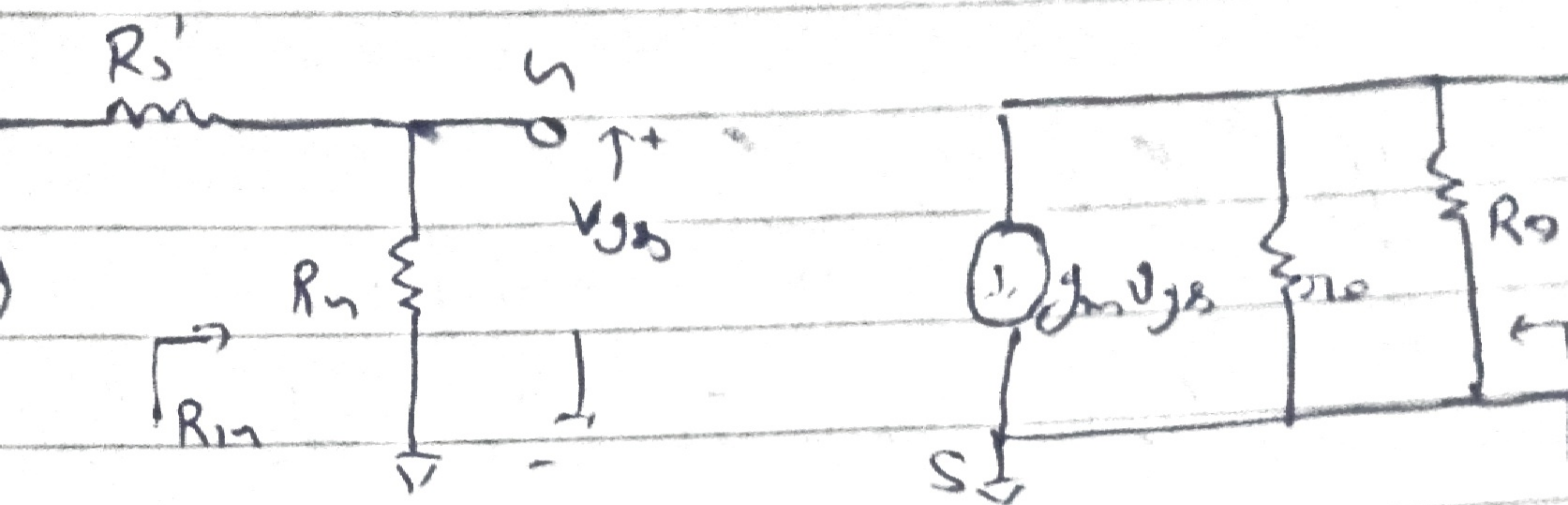
...ent CKT for low freq. operation

Cause there is Insulator b/w gate & ... NO connection b/w them. So ... input & Output (Ideal Device)

$$= \frac{R_n \, V_{in}}{R_n + R_s'} \simeq V_{in} \quad \text{if } R_n \ldots$$

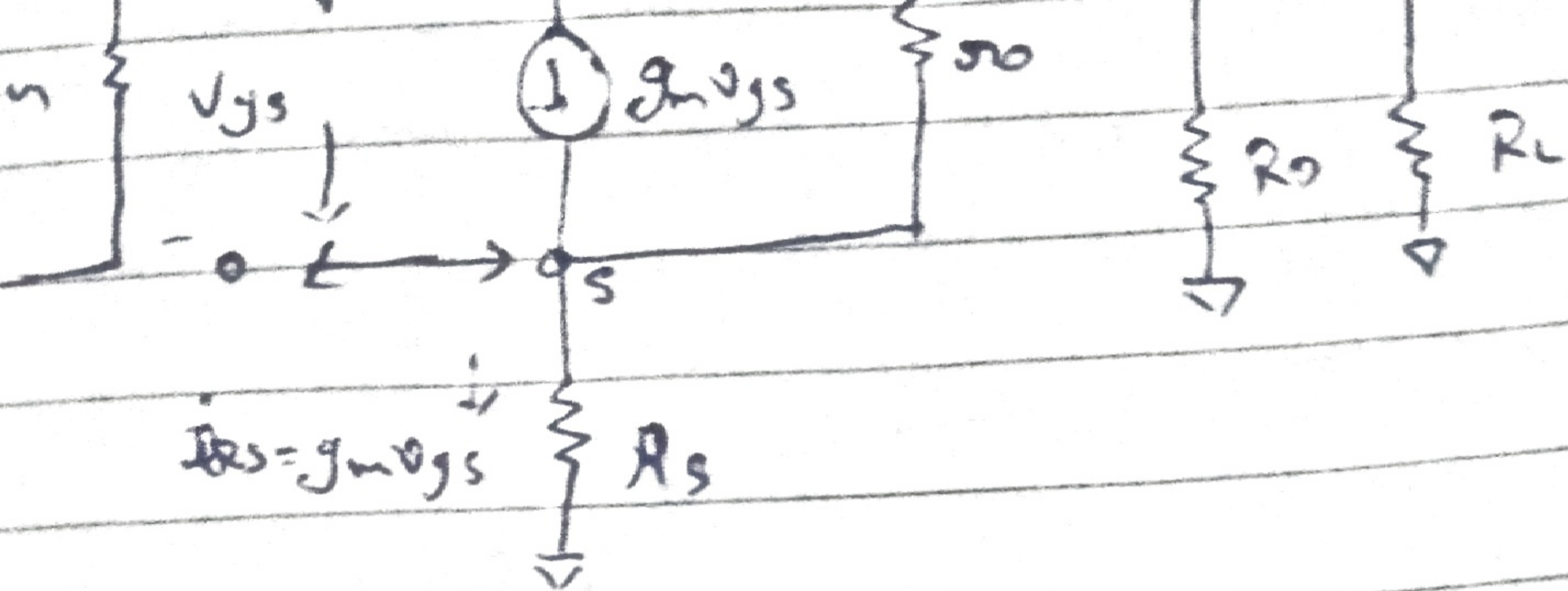
$$= \ominus g_m (r_o \| R_D \| R_L) \, V_{in}$$

So output is 180° phase o...

$$A_V = \frac{V_o}{V_{in}} = -g_m (r_o \| R_D \| R \ldots$$

... ① $\because r_o = \frac{1}{\lambda I_{DS}}$; since

n v_{gs} $g_m v_{gs}$ r_o R_D R_L

S

$I_{Rs} = g_m v_{gs}$ R_s

grounded but not v_{gs} so I ...

...e $R_{in} >> R_s'$

if $r_o \to \infty$ (very high)

$$v_{in} = v_{gs} + g_m v_{gs} \cdot R_s = v_{gs}(1 + g\ldots$$

$$v_{gs} = \left(\frac{v_{in}}{1 + g_m R_s} \right)$$

...ow

$$v_o = -g_m v_{gs} (R_D \| R_L)$$

$$= -g_m (R_D \| R_L) \frac{v_{in}}{1 + g_m R_s}$$

$$A_v = \frac{v_o}{v_{in}} = \frac{-g_m}{1 + g_m R_s} (R_D \| R\ldots$$